

**REMARKS**

Applicants wish to thank Examiner Hailey for indicating allowability of Claim 3 if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In addition, Applicants wish to thank the Examiner for the helpful discussion on May 22, 2007. The claims as amended were discussed. It was noted that Hennemann fail to disclose or suggest goniochromatic luster pigments comprising at least one dielectric low-refractive interference-colored layer having a geometrical layer thickness in the range from 80 to 800 nm as claimed in amended Claim 1.

Applicants respectfully request reconsideration of the application in view of the following remarks.

The present invention as set forth in **Claim 1** relates to goniochromatic luster pigments, comprising:

**at least one dielectric low-refractive interference-colored layer** which comprises  
a polar organic solvent which can interact with the layer material via hydroxyl or amide groups;  
**said layer having a geometric layer thickness in the range from 80 to 800 nm.**

In other words, the present invention as claimed relates to goniochromatic luster pigments showing interference color due to a specific low-refractive layer according to claim 1. This low-refractive layer includes a polar organic solvent whose molecules are small enough to fit into the molecular lattice of this layer and which contains functional groups which are capable of interacting with the molecular lattice and hence able to durably fix the solvent in the lattice (see page 7, lines 33-38 of the specification).

Hennemann fail to disclose or suggest goniochromatic luster pigments comprising at least one dielectric low-refractive interference-colored layer having a geometrical layer thickness in the range from 80 to 800 nm as claimed in amended Claim 1.

The only disclosure of Hennemann et al with respect to “size” can be found in the examples, but it refers to the size of the complete particle. Since Hennemann et al do not disclose the size limitation of the layer, the subject matter of amended Claim 1 is not anticipated by Hennemann et al.

Hennemann relates to surface-modified conductive pigments obtainable by partial coating of a conductive pigment with an organic modifying agent. Hennemann uses a conductive pigment of carbon black, carbon fibers, Sb-doped tin oxide, Al-doped zinc oxide, fluoride-doped tin oxide or mica, kaolin or barium sulfate, coated with a doped metal oxide.

This conductive pigment is partially coated by reaction with an organic modifying agent (claim 1). However, a partial coating is not a layer. According to Hennemann, column 3, lines 47-49, it is “decisive for the onset of the effect that the surface of the conductive pigment is only partly covered by organic radicals”. See also column 3, lines 57-59: **“compared with the amount needed for the formation of a complete layer, only 5 to 50% thereof, preferably 10 to 30% is employed”**. Consequently, the partial coverage disclosed by Hennemann is not a layer according to the present invention.

According to Hennemann, a solvent can be used for applying the partial coverage. However, if a solvent is used then it serves merely for better distribution of the modifying agent on the pigment surface (column 3, lines 29-31). If silanes are used, it may be necessary to subject them to preliminary hydrolysis, as acknowledged by the Examiner. However, according to column 3, line 40, removal of the solvent is involved in this operation.

Furthermore, in order to induce interference color, the respective low-refractive layer needs to have a specific thickness. According to <http://www.websters-online->

[dictionary.org/in/interference+color.html](http://dictionary.org/in/interference+color.html), interference color is produced by strengthening or weakening of certain wavelengths of a composite beam of light in consequence of interference. Interference is a physical phenomenon based on the superposition of two or more waves resulting in a new wave pattern. According to [http://www.kodak.com/US/plugins/acrobat/en/motion/education/character\\_of\\_color.pdf](http://www.kodak.com/US/plugins/acrobat/en/motion/education/character_of_color.pdf), page 17, (submitted with the amendment of December 12, 2006) interference color is produced by the interference of light waves in thin films.

An incomplete coverage being irregular in geometric thickness is not inducing interference colors because the specific superposition and therefore interference color induction mentioned before is disturbed by these irregularities. Even though Hennemann refers to the pigments according to examples 1 to 10 as “coated pearl luster pigments”, a person of ordinary skill in the art understands that a partial coating on pigments does not cause the interference color as disclosed in the present invention.

In summary:

1. The partial coverage according to Hennemann is not a low-refractive layer comprising a polar organic solvent as claimed in Claim 1 of the present invention.
2. Due to fundamental physical reasons an incomplete surface coverage as in Hennemann is not an interference colored layer as claimed.
3. Hennemann does not disclose a layer having a thickness as claimed.

Further, amended **Claim 7** relates to a process for preparing goniochromatic luster pigments as claimed in claim 1, which comprises heating the pigment particles in the polar organic solvent to a temperature  $\geq 100^{\circ}\text{C}$ .

The pigments of the present invention are prepared by thermal treatment in a polar organic solvent. The pigments of the present invention are suspended in the solvent. Water,

which is present in the dielectric low-refractive interference-colored layer will be replaced by the solvent, which interacts with the layer.

In contrast, the particles described in the cited reference, however, are merely “wetted” by a solvent, if any, which aids the distribution of a modifying agent. Wetting occurs at relatively low temperatures. After application of the modifying-agent, **the solvent is removed**, before the drying process at elevated temperatures. Therefore, it is hardly conceivable that the particles disclosed in the cited reference might anticipate the present invention.

The procedure disclosed by Claim 7 is not anticipated by Hennemann et al. In fact it was not anticipated in the previous version of the claims. Hennemann et al explicitly state, that the solvent, if any, is mixed with the pigments at temperatures between 50 and 100°C (col. 3, lines 21-27 and examples). Higher temperatures are only applied after removal of the solvent, during the drying process.

Furthermore, the pigment is never heated “in” a polar organic solvent, since the solvent, if any is only used for “wetting” purposes (col. 3, lines 21-27 and examples).

Therefore, the rejection of Claims 1, 2 and 4-10 over Hennemann is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

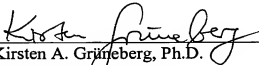
This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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